

Summary of Eastern Bering Sea Pollock Management

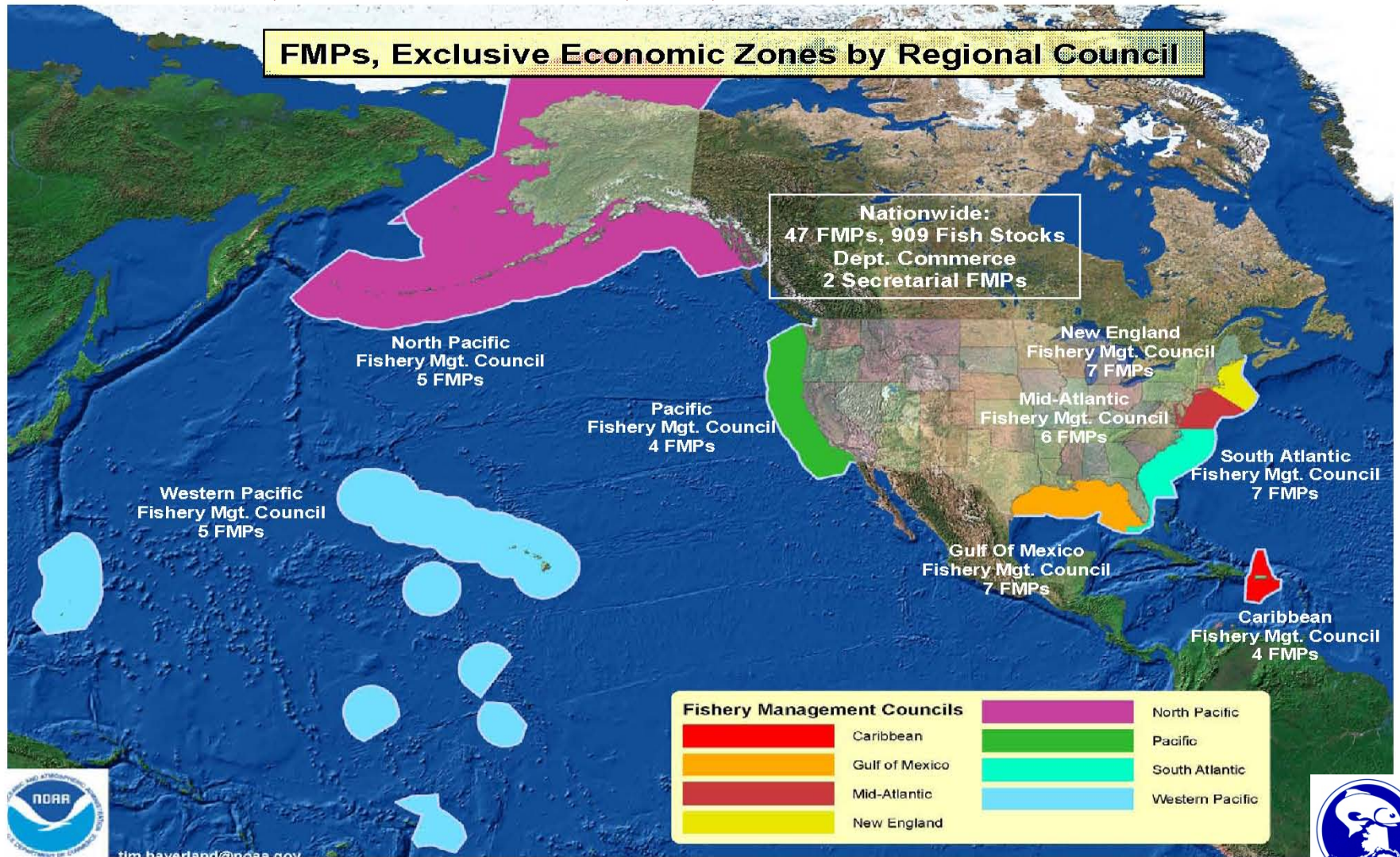
**19 May 2016
Alaska Fisheries Science Center
Seattle WA**

**Diana Stram
North Pacific Fishery Management Council
Anchorage, Alaska**



8 US Regional Fishery Management Councils

NPFMC: 47,000 mi of coastline; 360,000 mi² of fishable continental shelf

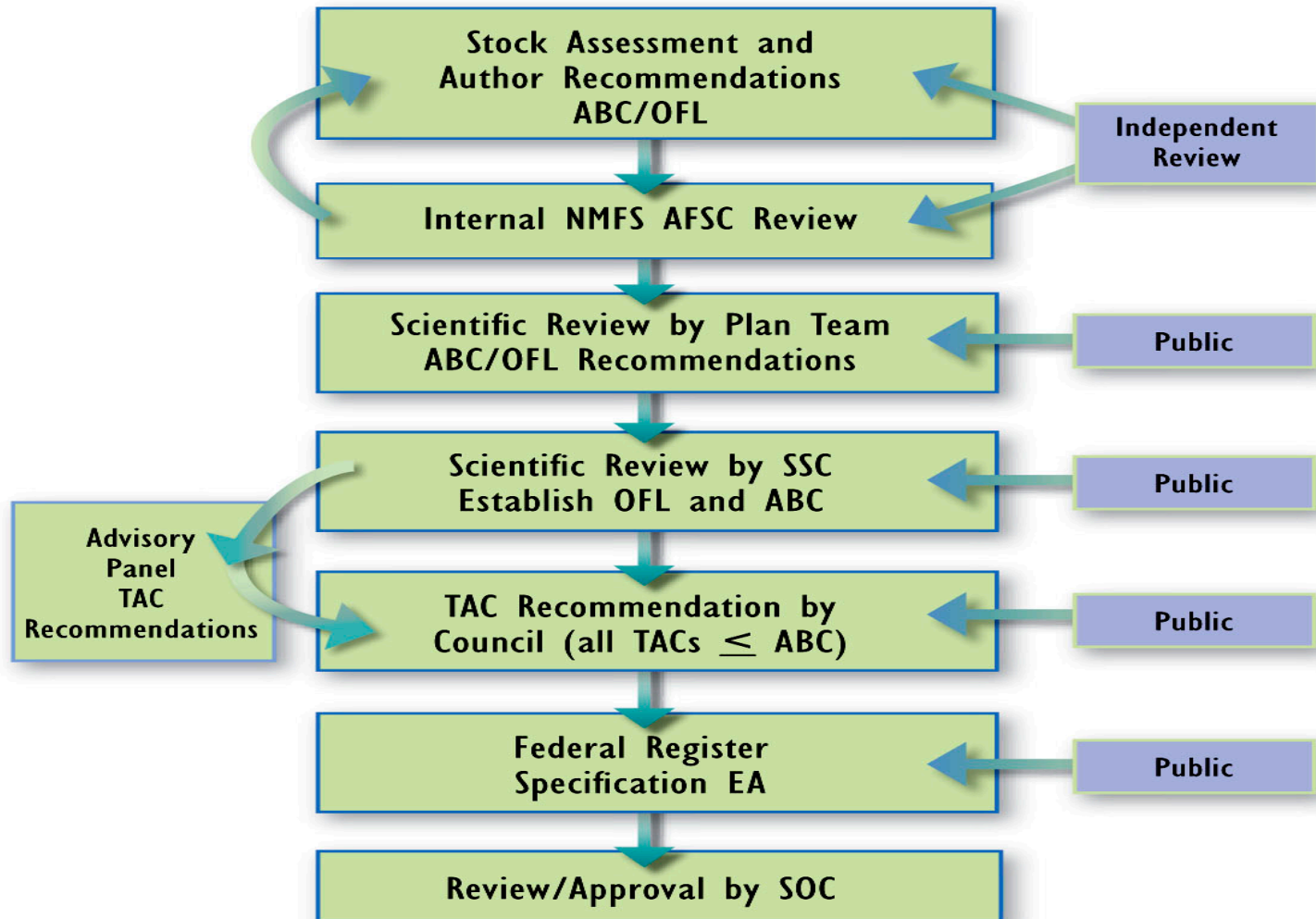


Background on the Council

- Origin: the NPFMC is one of 8 regional councils established by the Magnuson Act of 1976. The North Pacific Council is unique in that jurisdiction is specific to waters off only one state.
- Structure: 11 voting members: Alaska (6), Washington (3), Oregon (1), and 1 from NMFS; and 4 non-voting members (other federal agencies).
- Function: The Council maintains 6 fishery management plans (GOA Groundfish, BSAI Groundfish, Crab, Scallop, SE Salmon troll and Arctic). Approval and implementation of these FMPs is effected through our partnership with NOAA Fisheries.
- Process: Council meets 5 times/year, concurrently with its advisory groups: Advisory Panel (21 members from various constituencies), Scientific and Statistical Committee. Public testimony is taken at all meetings, for all issues.

Scientific and Statistical Committee sets biological reference points

Scientific Review Process for North Pacific Stock Assessments and Catch Specifications





Councils must take an approach that considers uncertainty in scientific information and management control of the fishery.

Scientific Uncertainty

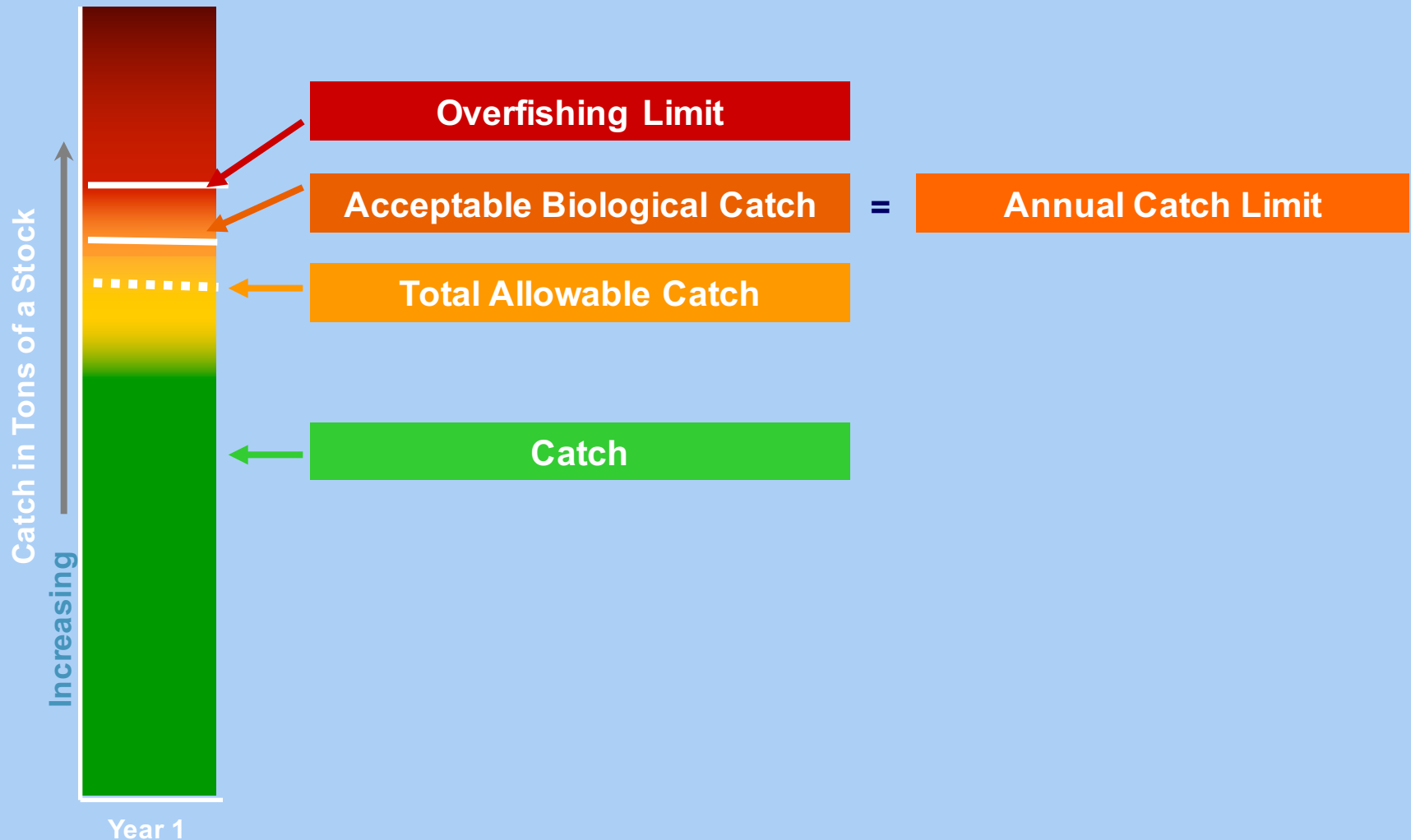
- **ABC control rule:** A specified approach to setting the ABC for a stock as a function of the scientific uncertainty in the estimate of OFL and any other scientific uncertainty.
- **Risk policy is part of ABC control rule:** The determination of ABC should be based, when possible, on the probability that an actual catch equal to the stock's ABC would result in overfishing. This probability that overfishing will occur cannot exceed 50 percent and should be a lower value.

Management Uncertainty

- Address through a full range of Accountability Measures (AMs).
- For fisheries without inseason management control to prevent the ACL from being exceeded, AMs should utilize ACTs that are set below ACLs so that catches do not exceed the ACL.

Biological Benchmarks

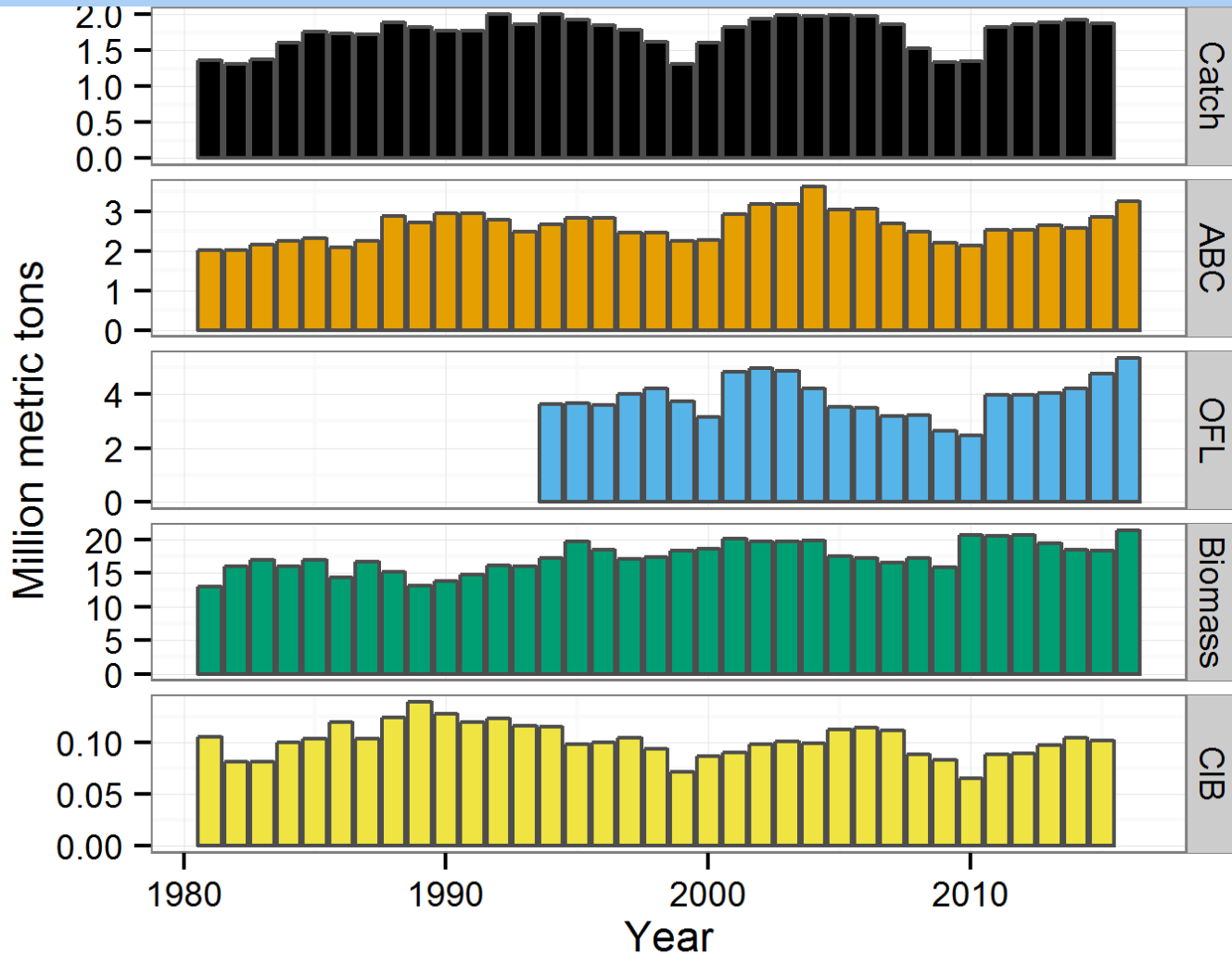
$OFL > ABC \geq ACL \geq TAC$



North Pacific Groundfish Fisheries



ABC control rules, $OFL > ABC \geq TAC$,
in-season fishery closures



22 Stocks/ Complexes

Walleye Pollock

Pacific cod

Sablefish

Greenland Turbot

Yellowfin sole

Rex sole

Arrowtooth Fldr

N. Rock Sole

Alaska Plaice

Flathead Sole

Other Flatfish

P. Ocean perch

N. Rockfish

Shortraker Rock.

Rougheye Rock.

Thornyheads

Other Rockfish

Squid

Skates

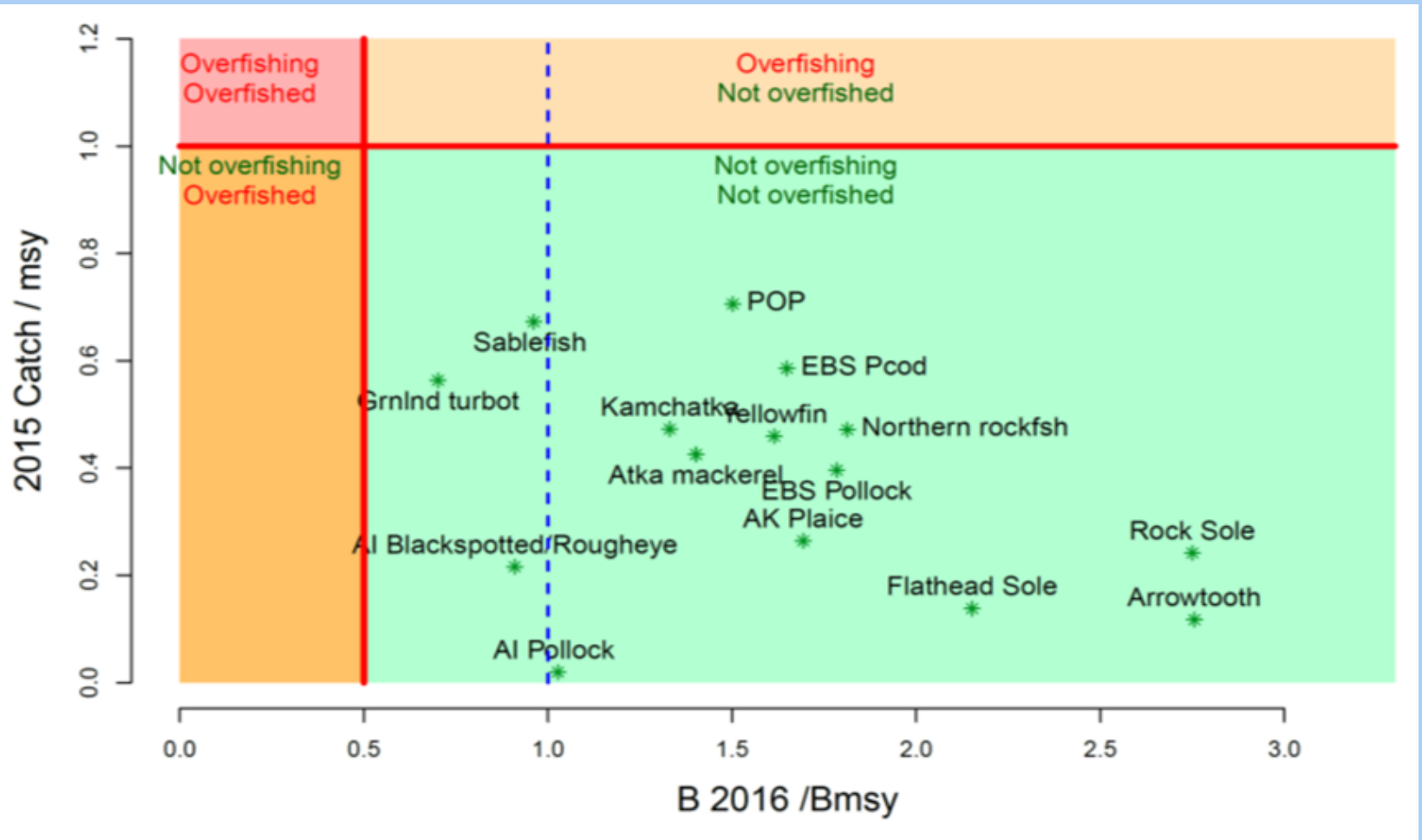
Sharks

Sculpins

Octopus

Status of Stocks

Tiers 1-3; December 2015



Elements of the Bering Sea Pollock Fishery Cooperative Program (1999) American Fisheries Act (1998)

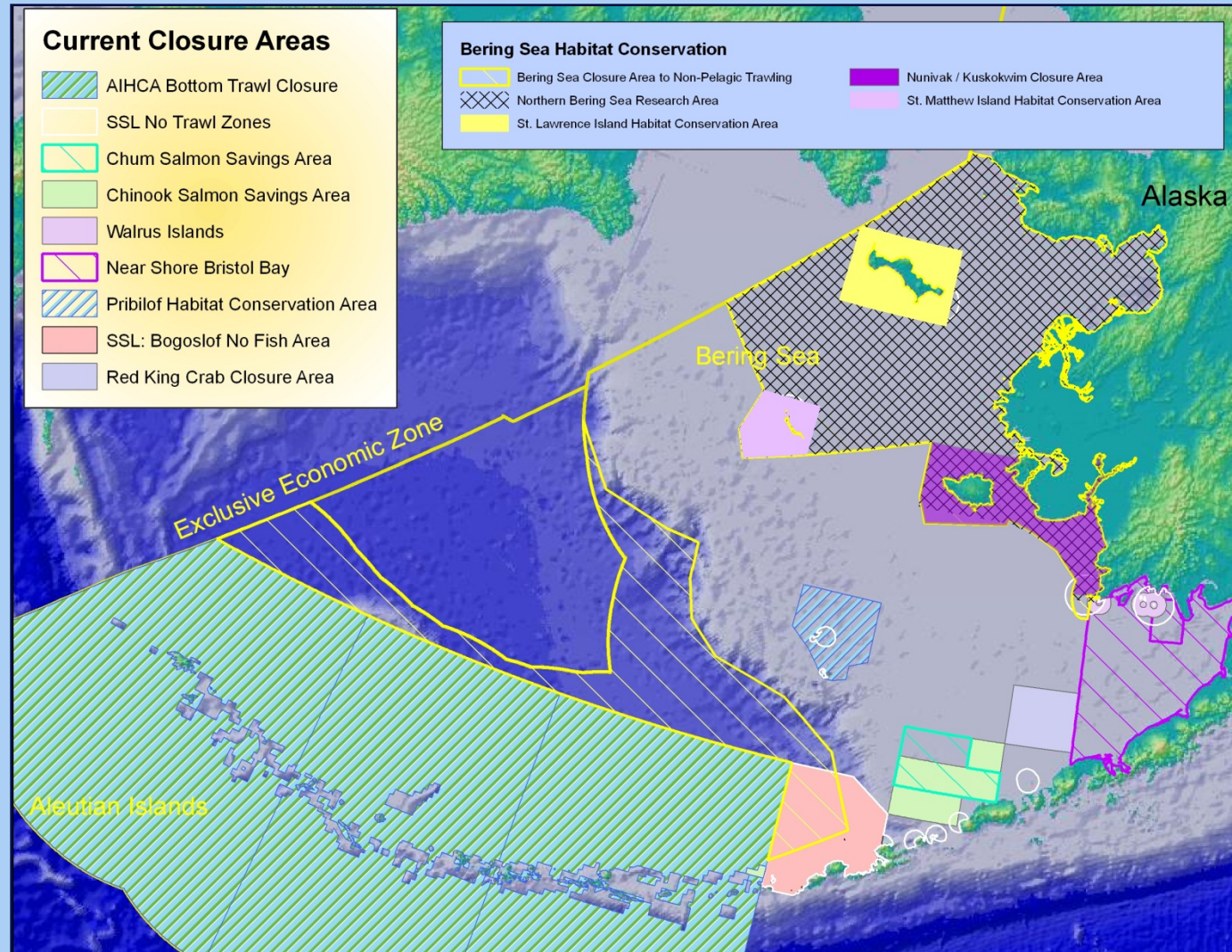
*High-volume, industrial fishery. Important on-shore and at-sea processing components.
Rationalization to address allocation conflicts, end derby, increase utilization/recovery rates,
improve safety.*

- Sector allocations
 - Allocation of shares to cooperatives (112 harvest vessels in 8 processor co-ops plus 14 vessels in 1 catcher/processor co-op)
- Closed class of harvesters and processors
- Cooperative/processor associations based on historical landing patterns
- Limited mobility to move among cooperatives or deliver to other processors
- Use/ownership caps
- Sideboards to limit encroachment on other fisheries
- High degree of fleet 'self-management' through agency approved cooperative agreements

In-Season Management

- Quotas
 - Seasonal and Spatial suballocations
- Prohibited Species Catch Limits (halibut, salmon, crab, herring)
- Maximum Retainable Allowance (of non-target species in target fishery)
- Interagency Electronic Reporting System (NMFS/ADF&G/IPHC)
plus logbooks
- SeaState set up inter-cooperative agreements to manage voluntary hot-spot authority for closing areas of high bycatch
- Entire NMFS Alaska Region Branch responsible for quota monitoring (>600 closures for *all* BSAI groundfish)

Seasonal, Area, Gear Closures Cover Much of the Exclusive Economic Zone



Arctic closed to commercial fishing 3 Dec 2009



BS Chinook bycatch program


2011: First hard caps on bycatch + industry incentive program

- Fishery closes if upper cap is reached (60,000)
- **Fishery is managed at lower cap level (~47,000) under incentive programs (vessel level closures)**
 - If lower cap is exceeded more than 2 of 7 years, the upper cap is removed and only lower cap applies
- At current bycatch levels (11,000 - 18,000) the incentive programs are critical to further bycatch reduction

Additional provisions of BSAI Chinook Management Program

- 100% observer coverage
- Complete census of all salmon species by observers
- Increased genetic sampling for stock of origin (both BSAI and GOA)
- Annual reports to Council on genetic stock of origin results from fishery
- Annual reports to Council on the effectiveness of the incentive programs

Changes recommended by Council April 2015

1. Combined chum and Chinook program
2. Changes to incentive plan requirements
 - More stringent in September/October
 - Required excluder usage
3. Lower bycatch caps in years of low Chinook abundance
4. Increased flexibility to avoid Chinook by allowing additional 5% of pollock quota to be harvested in winter season
 - Previously split 40:60  Now 45:55

Optimum Yield for BSAI FMP

- Establish in 1981 (Amd1)
- OY = range based on historical average catch reduced 15% to account for ecological, socio-economic factors
- OY = Sum of TACs
 - Must fall in range of 1.4-2.0 mmt
- 2.0 mmt has been upper limit of OY range and has constrained TACs ('2 mmt cap')
- Codified into law by Congress under the 2004 Consolidated Appropriations Act
- <https://alaskafisheries.noaa.gov/sites/default/files/embedded/consolidated-appropriations-act-2004-pl108-99.pdf>

How are TACs set?

- OFL and ABC come from the SSC and are based on application of the control rules and process in the FMP established under MSA, National Standards and a rigorous assessment and peer-review process
- The Council's role in catch specifications is to set TAC.
 - Several additional considerations come into how to set $TAC \leq ABC$ by species
 - Competing management objectives considered

What are management objectives?

- While MSA (including National Standards) apply across all U.S. stocks, in the North Pacific we have established additional management objectives in our groundfish FMPs
- 45 management objectives (in FMP) resulted from an extensive analysis of the cumulative impacts of iterative management decisions
 - Programmatic evaluation of our entire management of BSAI and GOA groundfish

FMPs revised to include management objectives

Prevent Overfishing:

1. Adopt conservative harvest levels for multi-species and single species fisheries and specify optimum yield.
2. Continue to use the 2 million mt optimum yield cap for the BSAI groundfish fisheries. [Continue to use the existing optimum yield cap for the GOA groundfish fisheries.]
3. Provide for adaptive management by continuing to specify optimum yield as a range.
4. Provide for periodic reviews of the adequacy of F_{40} and adopt improvements, as appropriate.
5. Continue to improve the management of species through species categories.

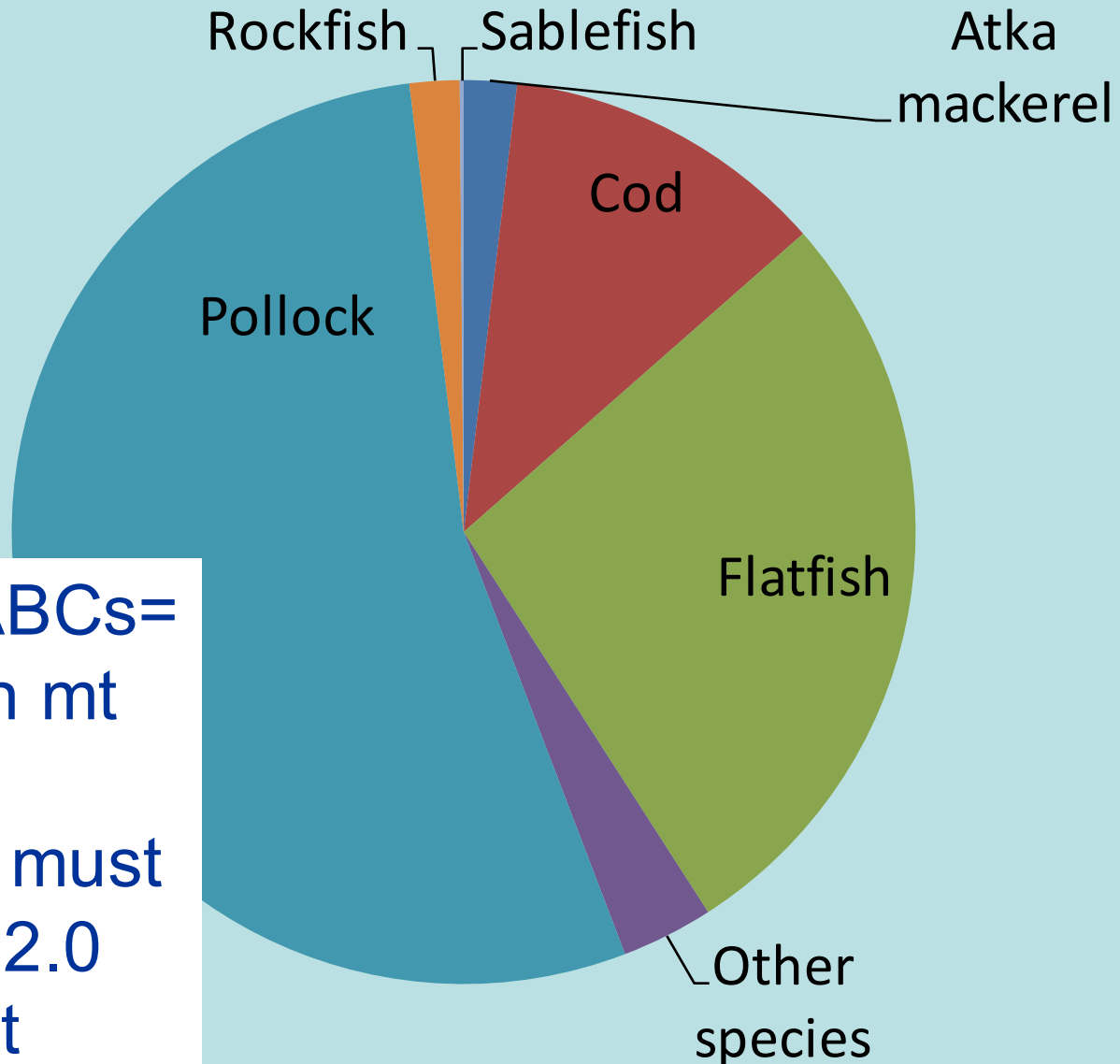
Preserve Food Web:

10. Develop indices of ecosystem health as targets for management.
11. Improve the procedure to adjust acceptable biological catch levels as necessary to account for uncertainty and ecosystem factors.
12. Continue to protect the integrity of the food web through limits on harvest of forage species.
13. Incorporate ecosystem-based considerations into fishery management decisions, as appropriate.

Considerations in setting TAC

- 2 million mt optimum yield cap:
- Bycatch considerations: halibut, salmon
- Incidental catch of non-target species
- To increase rebuilding rate or address conservation issue
- Account for state water removals
- Capacity of fishery to catch TAC
- Market driven

Bering Sea recommended ABC 2013



Rockfish

Sablefish

Atka
mackerel

Cod

Pollock

Flatfish

Other
species

Total sum of ABCs=
2.630 million mt

Sum of TACs must
not exceed 2.0
million mt

| Species | Area | 2013 | | |
|--------------------------------|----------|-----------|-----------|-----------|
| | | OFL | ABC | TAC |
| Pollock | EBS | 2,550,000 | 1,375,000 | 1,247,000 |
| | AI | 45,600 | 37,300 | 19,000 |
| | Bogoslof | 13,400 | 10,100 | 100 |
| Pacific cod | BSAI | 359,000 | 307,000 | 260,000 |
| | BS | n/a | n/a | n/a |
| | AI | n/a | n/a | n/a |
| Sablefish | BS | 1,870 | 1,580 | 1,580 |
| | AI | 2,530 | 2,140 | 2,140 |
| Yellowfin sole | BSAI | 220,000 | 206,000 | 198,000 |
| Greenland turbot | BSAI | 2,540 | 2,060 | 2,060 |
| | BS | n/a | 1,610 | 1,610 |
| | AI | n/a | 450 | 450 |
| Arrowtooth flounder | BSAI | 186,000 | 152,000 | 25,000 |
| Kamchatka flounder | BSAI | 16,300 | 12,200 | 10,000 |
| Northern rock sole | BSAI | 241,000 | 214,000 | 92,380 |
| Flathead sole | BSAI | 81,500 | 67,900 | 22,699 |
| Alaska plaice | BSAI | 67,000 | 55,200 | 20,000 |
| Other flatfish | BSAI | 17,800 | 13,300 | 3,500 |
| Pacific Ocean perch | BSAI | 41,900 | 35,100 | 35,100 |
| | BS | n/a | 8,130 | 8,130 |
| | EAI | n/a | 9,790 | 9,790 |
| | CAI | n/a | 6,980 | 6,980 |
| | WAI | n/a | 10,200 | 10,200 |
| Northern rockfish | BSAI | 12,200 | 9,850 | 3,000 |
| Blackspotted/Rougheye rockfish | BSAI | 462 | 378 | 378 |
| | EBS/EAI | n/a | 169 | 169 |
| | CAI/WAI | n/a | 209 | 209 |
| Shortraker rockfish | BSAI | 493 | 370 | 370 |
| Other rockfish | BSAI | 1,540 | 1,159 | 873 |
| | BS | n/a | 686 | 400 |
| | AI | n/a | 473 | 473 |
| Atka mackerel | BSAI | 57,700 | 50,000 | 25,920 |
| | EAI/BS | n/a | 16,900 | 16,900 |
| | CAI | n/a | 16,000 | 7,520 |
| | WAI | n/a | 17,100 | 1,500 |
| Skates | BSAI | 45,800 | 38,800 | 24,000 |
| Sculpins | BSAI | 56,400 | 42,300 | 5,600 |
| Sharks | BSAI | 1,360 | 1,020 | 100 |
| Squids | BSAI | 2,620 | 1,970 | 700 |
| Octopuses | BSAI | 3,450 | 2,590 | 500 |
| Total | BSAI | 4,028,465 | 2,639,317 | 2,000,000 |

Negotiate TACs
in years where
pollock ABC
high:
Main balance in
EBS pollock,
BSAI Pacific cod
and major
flatfish species

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| Shortraker rockfish | BSAI | 493 | 370 | 370 |
| Other rockfish | BSAI | 1,540 | 1,159 | 873 |
| | BS | n/a | 686 | 400 |
| | AI | n/a | 473 | 473 |
| Atka mackerel | BSAI | 57,700 | 50,000 | 25,920 |
| | EAI/BS | n/a | 16,900 | 16,900 |
| | CAI | n/a | 16,000 | 7,520 |
| | WAI | n/a | 17,100 | 1,500 |
| Skates | BSAI | 45,800 | 38,800 | 24,000 |
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| Sharks | BSAI | 1,360 | 1,020 | 100 |
| Squids | BSAI | 2,620 | 1,970 | 700 |
| Octopuses | BSAI | 3,450 | 2,590 | 500 |
| Total | BSAI | 4,028,465 | 2,639,317 | 2,000,000 |

TAC = ABC for highest value, lower volume species and most low volume rockfish

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| Total | BSAI | 4,028,465 | 2,639,317 | 2,000,000 |

Limited market value,
Bycatch of halibut

Ability to fully
prosecute
complicated by
bycatch limits
for halibut

Recent actions
allow Flatfish
fishery greater
flexibility to
harvest TAC

| | | | | |
|--------------------------------|---------|-----------|-----------|-----------|
| | EAI | n/a | 9,790 | 9,790 |
| | CAI | n/a | 6,980 | 6,980 |
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Non-target species TAC set to meet or buffer incidental catch needs